



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,060	10/29/2003	Vladimir Grushin	PE0649USDIV1	5927

23906 7590 06/28/2005

E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
BARLEY MILL PLAZA 25/1128
4417 LANCASTER PIKE
WILMINGTON, DE 19805

EXAMINER

KIELIN, ERIK J

ART UNIT	PAPER NUMBER
----------	--------------

2813

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,060

Applicant(s)

GRUSHIN ET AL.

Examiner

Erik Kielin

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/29/03 10/14/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 12 October 2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because some of the references have not been provided with dates in accordance with 37 CFR 1.98(b)(5). Also the MPEP 609 states,

“Each publication must be identified by publisher, author (if any), title, relevant pages of the publication, and date and place of publication. The date of publication supplied must include at least the month and year of publication, except that the year of publication (without the month) will be accepted if the applicant points out in the information disclosure statement that the year of publication is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the particular month of publication is not in issue.” (Emphasis added.)

The IDS has been placed in the application file, but only the references initialed by Examiner have been considered. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 13, 14, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication 2003/0054198 A1 (**Tsuboyama et al.**).

Regarding claim 13, **Tsuboyama** discloses iridium (Ir) metal complexes for use in electroluminescent devices. The ligands on the iridium metal ion include, *inter alia*, two, substituted or unsubstituted 2-phenylpyridines and one unsubstituted or a methyl- or fluoro-substituted 8-quinoline (p. 7, formula 42 and p. 12, formulas (11) and (13)). Each of the 2-phenylpyridines may be substituted with fluorine and trifluoromethyl at any location on the rings (p. 4, paragraph [0047]-[0049]), which reads on the claimed two ligands of 2-(4-fluorophenyl)-5-trifluoromethylpyridine.

Regarding claims 14 and 17, **Tsuboyama** discloses that the iridium complexes are used in the light-emitting layer of an electronic, light-emitting device (Figs. 1-5; p. 22, paragraphs [0145]-[0160]).

Regarding claim 18, because the light-emitting layer is the location where electrons and holes charges are transported to recombine with the emission of light. The light-emitting layer is a charge transport layer because the charges must move through the light-emitting layer in order to recombine.

Art Unit: 2813

3. Claims 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application Publication 2002/0048689 A1 (**Igarashi et al.**).

Igarashi discloses iridium (Ir) metal complexes for use in electroluminescent devices. Formula (3) on p. 5 discloses the presently claimed general formula and discloses a specifically claimed compound of claim 16 (p. 7, formula (1-1). General formula (3) shows the following ligands: (1) fluorine-substituted 2-phenylpyridines (paragraphs [0057], [0069]); (2) the R^{31} may be phenyl thereby giving a triphenylphosphine, and (3) L^{31} may be chlorine.

The emission wavelength necessarily falls between 450-500 nm because the same compound as claimed is disclosed in **Igarashi**. The amount of the Ir complex in the light-emitting layer is 1% to 50% (paragraph [0043]) which reads on at least 20%.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12, 14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2003/0054198 A1 (**Tsuboyama et al.**) in view of WO 00/70655 (**Baldo et al.**).

Regarding claim 12, **Tsuboyama** discloses iridium (Ir) metal complexes for use in electroluminescent devices. The ligands on the iridium metal ion include, *inter alia*, two, substituted or unsubstituted 2-phenylpyridines and one unsubstituted or a methyl- or fluoro-

Art Unit: 2813

substituted 8-quinoline (p. 7, formula 42 and p. 12, formulas (11) and (13)). Each of the 2-phenylpyridines may be substituted with fluorine and trifluoromethyl at any location on the rings (p. 4, paragraph [0047]-[0049]), which reads on the claimed two ligands of 2-(4-fluorophenyl)-5-trifluoromethylpyridine.

Tsuboyama does not expressly state that the methyl group of the 8-quinoline as shown on p. 12, is located at the same location on the nitrogen ring, as presently claimed, specifically bonded to the carbon adjacent the nitrogen.

Baldo, like **Tsuboyama** discloses substituted ligands for electroluminescent Ir metal complexes, and teaches that the substituent groups can be located in any position on either ring of the ligands. **Baldo** indicates that moving the functional group beneficially “give different color emission,” “different carrier transport,” and “alter the emissive properties” (**Baldo**, pp. 14-15).

It would have been obvious for one of ordinary skill in the art, at the time of the invention to locate the substituents of **Tsuboyama** at each specific location on the 8-quinoline ring to beneficially affect the emissive properties of the Ir complex, as taught to be beneficial in **Baldo**, to thereby gain a broader range of color emissions.

Regarding claims 14 and 17, **Tsuboyama** discloses that the iridium complexes are used in the light-emitting layer of an electronic, light-emitting device (Figs. 1-5; p. 22, paragraphs [0145]-[0160]).

Regarding claim 18, because the light-emitting layer in **Tsuboyama** is the location where electrons and holes charges are transported to recombine with the emission of light. The light-

Art Unit: 2813

emitting layer is a charge transport layer because the charges must move through the light-emitting layer in order to recombine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 571-272-1693. The examiner can normally be reached from 9:00 - 19:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erik Kielin
Primary Examiner
June 26, 2005